

SEQUENCE LISTING

<110> INSERM

<120> IL-11 muteins

<130> 960-47

<140> 10/565,626

<141> 2006-01-24

<150> PCT/EP04/009165

<151> 2004-07-29

<150> US 60/490,525

<151> 2003-07-29

<160> 90

<170> PatentIn version 3.3

<210> 1

<211> 199

<212> PRT

<213> Homo sapiens

<400> 1

Met Asn Cys Val Cys Arg Leu Val Leu Val Val Leu Ser Leu Trp Pro
1 5 10 15

Asp Thr Ala Val Ala Pro Gly Pro Pro Pro Gly Pro Pro Arg Val Ser
20 25 30

Pro Asp Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser
35 40 45

Leu Leu Ala Asp Thr Arg Gln Leu Ala Ala Gln Leu Arg Asp Lys Phe
50 55 60

Pro Ala Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met
65 70 75 80

Ser Ala Gly Ala Leu Gly Ala Leu Gln Leu Pro Gly Val Leu Thr Arg
85 90 95

Leu Arg Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg
100 105 110

Arg Ala Gly Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr

115

120

125

Leu Gln Ala Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met
 130 135 140

Ser Arg Leu Ala Leu Pro Gln Pro Pro Pro Asp Pro Pro Ala Pro Pro
 145 150 155 160

Leu Ala Pro Pro Ser Ser Ala Trp Gly Gly Ile Arg Ala Ala His Ala
 165 170 175

Ile Leu Gly Gly Leu His Leu Thr Leu Asp Trp Ala Val Arg Gly Leu
 180 185 190

Leu Leu Leu Lys Thr Arg Leu
 195

<210> 2

<211> 199

<212> PRT

<213> *Macaca fascicularis*

<400> 2

Met Asn Cys Val Cys Arg Leu Val Leu Val Val Leu Ser Leu Trp Pro
 1 5 10 15

Asp Thr Ala Val Ala Pro Gly Pro Pro Pro Gly Ser Pro Arg Ala Ser
 20 25 30

Pro Asp Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser
 35 40 45

Leu Leu Glu Asp Thr Arg Gln Leu Thr Ile Gln Leu Lys Asp Lys Phe
 50 55 60

Pro Ala Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met
 65 70 75 80

Ser Ala Gly Ala Leu Gly Ala Leu Gln Leu Pro Ser Val Leu Thr Arg
 85 90 95

Leu Arg Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg
 100 105 110

Arg Ala Met Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr
115 120 125

Leu Gln Thr Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met
130 135 140

Ser Arg Leu Ala Leu Pro Gln Leu Pro Pro Asp Pro Pro Ala Pro Pro
145 150 155 160

Leu Ala Pro Pro Ser Ser Thr Trp Gly Gly Ile Arg Ala Ala His Ala
165 170 175

Ile Leu Gly Gly Leu His Leu Thr Leu Asp Trp Ala Val Arg Gly Leu
180 185 190

Leu Leu Leu Lys Thr Arg Leu
195

<210> 3
<211> 199
<212> PRT
<213> Mus musculus

<400> 3

Met Asn Cys Val Cys Arg Leu Val Leu Val Val Leu Ser Leu Trp Pro
1 5 10 15

Asp Arg Val Val Ala Pro Gly Pro Pro Ala Gly Ser Pro Arg Val Ser
20 25 30

Ser Asp Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser
35 40 45

Leu Leu Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe
50 55 60

Pro Ala Asp Gly Asp His Ser Leu Asp Ser Leu Pro Thr Leu Ala Met
65 70 75 80

Ser Ala Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg
85 90 95

Leu Arg Val Asp Leu Met Ser Tyr Leu Arg His Val Gln Trp Leu Arg

100	105	110
Arg Ala Gly Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala		
115	120	125
Leu Gln Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met		
130	135	140
Ser Arg Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Val Ile Pro		
145	150	155
		160
Leu Gly Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala		
	165	170
		175
Ile Leu Gly Gly Leu His Leu Thr Leu Asp Trp Ala Val Arg Gly Leu		
	180	185
		190
Leu Leu Leu Lys Thr Arg Leu		
195		
<210> 4		
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<212> PRT		
<213> Rattus norvegicus		
<400> 4		
Met Asn Cys Val Cys Arg Leu Val Leu Val Val Leu Ser Leu Trp Pro		
1	5	10
		15
Asp Arg Val Val Ala Pro Gly Pro Pro Ala Gly Ser Pro Arg Val Ser		
	20	25
		30
Ser Asp Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser		
35	40	45
Leu Leu Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe		
50	55	60
Pro Ala Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met		
65	70	75
		80
Ser Ala Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg		
	85	90
		95

Leu Arg Val Asp Leu Met Ser Tyr Phe Arg His Val Gln Trp Leu Arg
100 105 110

Arg Ala Ala Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala
115 120 125

Leu Gln Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met
130 135 140

Ser Arg Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Ala Val Pro
145 150 155 160

Leu Gly Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala
165 170 175

Ile Leu Gly Gly Leu His Leu Thr Leu Asp Trp Ala Val Arg Gly Leu
180 185 190

Leu Leu Leu Lys Thr Arg Leu
195

<210> 5
<211> 165
<212> PRT
<213> Homo sapiens

<400> 5

Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu
1 5 10 15

Ala Asp Thr Arg Gln Leu Ala Ala Gln Leu Arg Asp Lys Phe Pro Ala
20 25 30

Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala
35 40 45

Gly Ala Leu Gly Ala Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg
50 55 60

Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala
65 70 75 80

Gly Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln
85 90 95

Ala Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg
100 105 110

Leu Ala Leu Pro Gln Pro Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala
115 120 125

Pro Pro Ser Ser Ala Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu
130 135 140

Gly Gly Leu His Leu Thr Leu Asp Trp Ala Val Arg Gly Leu Leu Leu
145 150 155 160

Leu Lys Thr Arg Leu
165

<210> 6
<211> 165
<212> PRT
<213> Macaca fascicularis

<400> 6

Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu
1 5 10 15

Glu Asp Thr Arg Gln Leu Thr Ile Gln Leu Lys Asp Lys Phe Pro Ala
20 25 30

Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala
35 40 45

Gly Ala Leu Gly Ala Leu Gln Leu Pro Ser Val Leu Thr Arg Leu Arg
50 55 60

Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala
65 70 75 80

Met Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln
85 90 95

Thr Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg
100 105 110

Leu Ala Leu Pro Gln Leu Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala
115 120 125

Pro Pro Ser Ser Thr Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu
130 135 140

Gly Gly Leu His Leu Thr Leu Asp Trp Ala Val Arg Gly Leu Leu Leu
145 150 155 160

Leu Lys Thr Arg Leu
165

<210> 7
<211> 165
<212> PRT
<213> Mus musculus

<400> 7

Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu
1 5 10 15

Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala
20 25 30

Asp Gly Asp His Ser Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala
35 40 45

Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg
50 55 60

Val Asp Leu Met Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala
65 70 75 80

Gly Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln
85 90 95

Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg
100 105 110

Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Val Ile Pro Leu Gly
115 120 125

Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala Ile Leu
130 135 140

Gly Gly Leu His Leu Thr Leu Asp Trp Ala Val Arg Gly Leu Leu Leu
145 150 155 160

Leu Lys Thr Arg Leu
165

<210> 8
<211> 165
<212> PRT
<213> Rattus norvegicus

<400> 8

Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu
1 5 10 15

Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala
20 25 30

Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala
35 40 45

Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg
50 55 60

Val Asp Leu Met Ser Tyr Phe Arg His Val Gln Trp Leu Arg Arg Ala
65 70 75 80

Ala Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln
85 90 95

Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg
100 105 110

Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Ala Val Pro Leu Gly
115 120 125

Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala Ile Leu
130 135 140

Gly Gly Leu His Leu Thr Leu Asp Trp Ala Val Arg Gly Leu Leu Leu
145 150 155 160

Leu Lys Thr Arg Leu
165

<210> 9
<211> 165
<212> PRT
<213> Artificial

<220>
<223> IL-11 mutein

<220>
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<222> (148)..(148)
<223> X = A, V, L, I, F, M, P, W

<220>
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<222> (152)..(152)
<223> X = A, V, L, I, F, M, P, W

<400> 9

Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu
1 5 10 15

Ala Asp Thr Arg Gln Leu Ala Ala Gln Leu Arg Asp Lys Phe Pro Ala
20 25 30

Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala
35 40 45

Gly Ala Leu Gly Ala Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg
50 55 60

Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala
65 70 75 80

Gly Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln
85 90 95

Ala Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg
100 105 110

Leu Ala Leu Pro Gln Pro Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala
115 120 125

Pro Pro Ser Ser Ala Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu
130 135 140

Gly Gly Leu Xaa Leu Thr Leu Xaa Trp Ala Val Arg Gly Leu Leu Leu
145 150 155 160

Leu Lys Thr Arg Leu
165

<210> 10
<211> 165
<212> PRT
<213> Artificial

<220>
<223> IL-11 mutein

<400> 10

Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu
1 5 10 15

Ala Asp Thr Arg Gln Leu Ala Ala Gln Leu Arg Asp Lys Phe Pro Ala
20 25 30

Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala
35 40 45

Gly Ala Leu Gly Ala Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg
50 55 60

Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala
65 70 75 80

Gly Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln
85 90 95

Ala Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg
100 105 110

Leu Ala Leu Pro Gln Pro Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala
115 120 125

Pro Pro Ser Ser Ala Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu
130 135 140

Gly Gly Leu Val Leu Thr Leu Ala Trp Ala Val Arg Gly Leu Leu Leu
145 150 155 160

Leu Lys Thr Arg Leu
165

<210> 11
<211> 165
<212> PRT
<213> Artificial

<220>
<223> IL-11 mutein

<400> 11

Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu
1 5 10 15

Ala Asp Thr Arg Gln Leu Ala Ala Gln Leu Arg Asp Lys Phe Pro Ala
20 25 30

Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala
35 40 45

Gly Ala Leu Gly Ala Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg
50 55 60

Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala
65 70 75 80

Gly Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln
85 90 95

Ala Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg
100 105 110

Leu Ala Leu Pro Gln Pro Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala
115 120 125

Pro Pro Ser Ser Ala Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu

130

135

140

Gly Gly Leu Ala Leu Thr Leu Val Trp Ala Val Arg Gly Leu Leu Leu
 145 150 155 160

Leu Lys Thr Arg Leu
 165

<210> 12
 <211> 165
 <212> PRT
 <213> Artificial

<220>
 <223> IL-11 mutein

<400> 12

Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu
 1 5 10 15

Ala Asp Thr Arg Gln Leu Ala Ala Gln Leu Arg Asp Lys Phe Pro Ala
 20 25 30

Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala
 35 40 45

Gly Ala Leu Gly Ala Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg
 50 55 60

Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala
 65 70 75 80

Gly Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln
 85 90 95

Ala Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg
 100 105 110

Leu Ala Leu Pro Gln Pro Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala
 115 120 125

Pro Pro Ser Ser Ala Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu
 130 135 140

Gly Gly Leu Val Leu Thr Leu Val Trp Ala Val Arg Gly Leu Leu Leu
145 150 155 160

Leu Lys Thr Arg Leu
165

<210> 13
<211> 165
<212> PRT
<213> Artificial

<220>
<223> IL-11 mutein

<400> 13

Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu
1 5 10 15

Ala Asp Thr Arg Gln Leu Ala Ala Gln Leu Arg Asp Lys Phe Pro Ala
20 25 30

Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala
35 40 45

Gly Ala Leu Gly Ala Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg
50 55 60

Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala
65 70 75 80

Gly Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln
85 90 95

Ala Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg
100 105 110

Leu Ala Leu Pro Gln Pro Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala
115 120 125

Pro Pro Ser Ser Ala Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu
130 135 140

Gly Gly Leu Ala Leu Thr Leu Ala Trp Ala Val Arg Gly Leu Leu Leu
145 150 155 160

Leu Lys Thr Arg Leu
165

<210> 14
<211> 178
<212> PRT
<213> Artificial

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<223> IL-11 mutein

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<223> X = A, V, L, I, F, M, P, W

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<222> (165)..(165)
<223> X = A, V, L, I, F, M, P, W

<400> 14

Pro Gly Pro Pro Pro Gly Pro Pro Arg Val Ser Pro Asp Pro Arg Ala
1 5 10 15

Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu Ala Asp Thr
20 25 30

Arg Gln Leu Ala Ala Gln Leu Arg Asp Lys Phe Pro Ala Asp Gly Asp
35 40 45

His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala Gly Ala Leu
50 55 60

Gly Ala Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg Ala Asp Leu
65 70 75 80

Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala Gly Gly Ser
85 90 95

Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln Ala Arg Leu
100 105 110

Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg Leu Ala Leu
115 120 125

Pro Gln Pro Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala Pro Pro Ser
130 135 140

Ser Ala Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu Gly Gly Leu
145 150 155 160

Xaa Leu Thr Leu Xaa Trp Ala Val Arg Gly Leu Leu Leu Leu Lys Thr
165 170 175

Arg Leu

<210> 15
<211> 178
<212> PRT
<213> Artificial

<220>
<223> IL-11 mutein

<400> 15

Pro Gly Pro Pro Pro Gly Pro Pro Arg Val Ser Pro Asp Pro Arg Ala
1 5 10 15

Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu Ala Asp Thr
20 25 30

Arg Gln Leu Ala Ala Gln Leu Arg Asp Lys Phe Pro Ala Asp Gly Asp
35 40 45

His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala Gly Ala Leu
50 55 60

Gly Ala Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg Ala Asp Leu
65 70 75 80

Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala Gly Gly Ser
85 90 95

Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln Ala Arg Leu
100 105 110

Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg Leu Ala Leu

115

120

125

Pro Gln Pro Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala Pro Pro Ser
 130 135 140

Ser Ala Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu Gly Gly Leu
 145 150 155 160

Val Leu Thr Leu Ala Trp Ala Val Arg Gly Leu Leu Leu Leu Lys Thr
 165 170 175

Arg Leu

<210> 16
 <211> 178
 <212> PRT
 <213> Artificial

<220>
 <223> IL-11 mutein

<400> 16

Pro Gly Pro Pro Pro Gly Pro Pro Arg Val Ser Pro Asp Pro Arg Ala
 1 5 10 15

Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu Ala Asp Thr
 20 25 30

Arg Gln Leu Ala Ala Gln Leu Arg Asp Lys Phe Pro Ala Asp Gly Asp
 35 40 45

His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala Gly Ala Leu
 50 55 60

Gly Ala Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg Ala Asp Leu
 65 70 75 80

Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala Gly Gly Ser
 85 90 95

Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln Ala Arg Leu
 100 105 110

Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg Leu Ala Leu
115 120 125

Pro Gln Pro Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala Pro Pro Ser
130 135 140

Ser Ala Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu Gly Gly Leu
145 150 155 160

Ala Leu Thr Leu Val Trp Ala Val Arg Gly Leu Leu Leu Leu Lys Thr
165 170 175

Arg Leu

<210> 17
<211> 178
<212> PRT
<213> Artificial

<220>
<223> IL-11 mutein

<400> 17

Pro Gly Pro Pro Pro Gly Pro Pro Arg Val Ser Pro Asp Pro Arg Ala
1 5 10 15

Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu Ala Asp Thr
20 25 30

Arg Gln Leu Ala Ala Gln Leu Arg Asp Lys Phe Pro Ala Asp Gly Asp
35 40 45

His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala Gly Ala Leu
50 55 60

Gly Ala Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg Ala Asp Leu
65 70 75 80

Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala Gly Gly Ser
85 90 95

Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln Ala Arg Leu
100 105 110

Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg Leu Ala Leu
115 120 125

Pro Gln Pro Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala Pro Pro Ser
130 135 140

Ser Ala Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu Gly Gly Leu
145 150 155 160

Val Leu Thr Leu Val Trp Ala Val Arg Gly Leu Leu Leu Leu Lys Thr
165 170 175

Arg Leu

<210> 18
<211> 178
<212> PRT
<213> Artificial

<220>
<223> IL-11 mutein

<400> 18

Pro Gly Pro Pro Pro Gly Pro Pro Arg Val Ser Pro Asp Pro Arg Ala
1 5 10 15

Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu Ala Asp Thr
20 25 30

Arg Gln Leu Ala Ala Gln Leu Arg Asp Lys Phe Pro Ala Asp Gly Asp
35 40 45

His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala Gly Ala Leu
50 55 60

Gly Ala Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg Ala Asp Leu
65 70 75 80

Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala Gly Gly Ser
85 90 95

Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln Ala Arg Leu

100 105 110
 Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg Leu Ala Leu
 115 120 125
 Pro Gln Pro Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala Pro Pro Ser
 130 135 140
 Ser Ala Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu Gly Gly Leu
 145 150 155 160
 Ala Leu Thr Leu Ala Trp Ala Val Arg Gly Leu Leu Leu Leu Lys Thr
 165 170 175

Arg Leu

<210> 19
 <211> 199
 <212> PRT
 <213> Artificial

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 <223> IL-11 mutein

<220>
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<220>
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 <222> (186)..(186)
 <223> X = A, V, L, I, F, M, P, W

<400> 19

Met Asn Cys Val Cys Arg Leu Val Leu Val Val Leu Ser Leu Trp Pro
 1 5 10 15

Asp Thr Ala Val Ala Pro Gly Pro Pro Pro Gly Pro Pro Arg Val Ser
 20 25 30

Pro Asp Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser
 35 40 45

Leu Leu Ala Asp Thr Arg Gln Leu Ala Ala Gln Leu Arg Asp Lys Phe

50

55

60

Pro Ala Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met
65 70 75 80

Ser Ala Gly Ala Leu Gly Ala Leu Gln Leu Pro Gly Val Leu Thr Arg
85 90 95

Leu Arg Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg
100 105 110

Arg Ala Gly Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr
115 120 125

Leu Gln Ala Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met
130 135 140

Ser Arg Leu Ala Leu Pro Gln Pro Pro Pro Asp Pro Pro Ala Pro Pro
145 150 155 160

Leu Ala Pro Pro Ser Ser Ala Trp Gly Gly Ile Arg Ala Ala His Ala
165 170 175

Ile Leu Gly Gly Leu Xaa Leu Thr Leu Xaa Trp Ala Val Arg Gly Leu
180 185 190

Leu Leu Leu Lys Thr Arg Leu
195

<210> 20
<211> 199
<212> PRT
<213> Artificial

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<223> IL-11 mutein

<400> 20

Met Asn Cys Val Cys Arg Leu Val Leu Val Val Leu Ser Leu Trp Pro
1 5 10 15

Asp Thr Ala Val Ala Pro Gly Pro Pro Pro Gly Pro Pro Arg Val Ser
20 25 30

Pro Asp Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser
35 40 45

Leu Leu Ala Asp Thr Arg Gln Leu Ala Ala Gln Leu Arg Asp Lys Phe
50 55 60

Pro Ala Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met
65 70 75 80

Ser Ala Gly Ala Leu Gly Ala Leu Gln Leu Pro Gly Val Leu Thr Arg
85 90 95

Leu Arg Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg
100 105 110

Arg Ala Gly Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr
115 120 125

Leu Gln Ala Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met
130 135 140

Ser Arg Leu Ala Leu Pro Gln Pro Pro Pro Asp Pro Pro Ala Pro Pro
145 150 155 160

Leu Ala Pro Pro Ser Ser Ala Trp Gly Gly Ile Arg Ala Ala His Ala
165 170 175

Ile Leu Gly Gly Leu Val Leu Thr Leu Ala Trp Ala Val Arg Gly Leu
180 185 190

Leu Leu Leu Lys Thr Arg Leu
195

<210> 21
<211> 199
<212> PRT
<213> Artificial

<220>
<223> IL-11 mutein

<400> 21

Met Asn Cys Val Cys Arg Leu Val Leu Val Val Leu Ser Leu Trp Pro
1 5 10 15

Asp Thr Ala Val Ala Pro Gly Pro Pro Pro Gly Pro Pro Arg Val Ser
 20 25 30

Pro Asp Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser
 35 40 45

Leu Leu Ala Asp Thr Arg Gln Leu Ala Ala Gln Leu Arg Asp Lys Phe
 50 55 60

Pro Ala Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met
 65 70 75 80

Ser Ala Gly Ala Leu Gly Ala Leu Gln Leu Pro Gly Val Leu Thr Arg
 85 90 95

Leu Arg Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg
 100 105 110

Arg Ala Gly Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr
 115 120 125

Leu Gln Ala Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met
 130 135 140

Ser Arg Leu Ala Leu Pro Gln Pro Pro Pro Asp Pro Pro Ala Pro Pro
 145 150 155 160

Leu Ala Pro Pro Ser Ser Ala Trp Gly Gly Ile Arg Ala Ala His Ala
 165 170 175

Ile Leu Gly Gly Leu Ala Leu Thr Leu Val Trp Ala Val Arg Gly Leu
 180 185 190

Leu Leu Leu Lys Thr Arg Leu
 195

<210> 22
 <211> 199
 <212> PRT
 <213> Artificial

<220>
 <223> IL-11 mutein

<400> 22

Met Asn Cys Val Cys Arg Leu Val Leu Val Val Leu Ser Leu Trp Pro
1 5 10 15

Asp Thr Ala Val Ala Pro Gly Pro Pro Gly Pro Pro Arg Val Ser
20 25 30

Pro Asp Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser
35 40 45

Leu Leu Ala Asp Thr Arg Gln Leu Ala Ala Gln Leu Arg Asp Lys Phe
50 55 60

Pro Ala Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met
65 70 75 80

Ser Ala Gly Ala Leu Gly Ala Leu Gln Leu Pro Gly Val Leu Thr Arg
85 90 95

Leu Arg Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg
100 105 110

Arg Ala Gly Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr
115 120 125

Leu Gln Ala Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met
130 135 140

Ser Arg Leu Ala Leu Pro Gln Pro Pro Pro Asp Pro Pro Ala Pro Pro
145 150 155 160

Leu Ala Pro Pro Ser Ser Ala Trp Gly Gly Ile Arg Ala Ala His Ala
165 170 175

Ile Leu Gly Gly Leu Val Leu Thr Leu Val Trp Ala Val Arg Gly Leu
180 185 190

Leu Leu Leu Lys Thr Arg Leu
195

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<211> 199

<212> PRT
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<400> 23

Met Asn Cys Val Cys Arg Leu Val Leu Val Val Leu Ser Leu Trp Pro
1 5 10 15

Asp Thr Ala Val Ala Pro Gly Pro Pro Pro Gly Pro Pro Arg Val Ser
20 25 30

Pro Asp Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser
35 40 45

Leu Leu Ala Asp Thr Arg Gln Leu Ala Ala Gln Leu Arg Asp Lys Phe
50 55 60

Pro Ala Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met
65 70 75 80

Ser Ala Gly Ala Leu Gly Ala Leu Gln Leu Pro Gly Val Leu Thr Arg
85 90 95

Leu Arg Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg
100 105 110

Arg Ala Gly Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr
115 120 125

Leu Gln Ala Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met
130 135 140

Ser Arg Leu Ala Leu Pro Gln Pro Pro Pro Asp Pro Pro Ala Pro Pro
145 150 155 160

Leu Ala Pro Pro Ser Ser Ala Trp Gly Gly Ile Arg Ala Ala His Ala
165 170 175

Ile Leu Gly Gly Leu Ala Leu Thr Leu Ala Trp Ala Val Arg Gly Leu
180 185 190

Leu Leu Leu Lys Thr Arg Leu

195

<210> 24
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<223> X = A, V, L, I, F, M, P, W

<400> 24

Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu
1 5 10 15

Glu Asp Thr Arg Gln Leu Thr Ile Gln Leu Lys Asp Lys Phe Pro Ala
20 25 30

Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala
35 40 45

Gly Ala Leu Gly Ala Leu Gln Leu Pro Ser Val Leu Thr Arg Leu Arg
50 55 60

Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala
65 70 75 80

Met Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln
85 90 95

Thr Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg
100 105 110

Leu Ala Leu Pro Gln Leu Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala
115 120 125

Pro Pro Ser Ser Thr Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu
130 135 140

Gly Gly Leu Xaa Leu Thr Leu Xaa Trp Ala Val Arg Gly Leu Leu Leu
145 150 155 160

Leu Lys Thr Arg Leu
165

<210> 25
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<220>
<223> IL-11 mutein

<400> 25

Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu
1 5 10 15

Glu Asp Thr Arg Gln Leu Thr Ile Gln Leu Lys Asp Lys Phe Pro Ala
20 25 30

Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala
35 40 45

Gly Ala Leu Gly Ala Leu Gln Leu Pro Ser Val Leu Thr Arg Leu Arg
50 55 60

Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala
65 70 75 80

Met Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln
85 90 95

Thr Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg
100 105 110

Leu Ala Leu Pro Gln Leu Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala
115 120 125

Pro Pro Ser Ser Thr Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu
130 135 140

Gly Gly Leu Val Leu Thr Leu Ala Trp Ala Val Arg Gly Leu Leu Leu
145 150 155 160

Leu Lys Thr Arg Leu
165

<210> 26
<211> 165
<212> PRT
<213> Artificial

<220>
<223> IL-11 mutein

<400> 26

Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu
1 5 10 15

Glu Asp Thr Arg Gln Leu Thr Ile Gln Leu Lys Asp Lys Phe Pro Ala
20 25 30

Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala
35 40 45

Gly Ala Leu Gly Ala Leu Gln Leu Pro Ser Val Leu Thr Arg Leu Arg
50 55 60

Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala
65 70 75 80

Met Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln
85 90 95

Thr Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg
100 105 110

Leu Ala Leu Pro Gln Leu Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala
115 120 125

Pro Pro Ser Ser Thr Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu
130 135 140

Gly Gly Leu Ala Leu Thr Leu Val Trp Ala Val Arg Gly Leu Leu Leu
145 150 155 160

Leu Lys Thr Arg Leu
165

<210> 27
<211> 165
<212> PRT
<213> Artificial

<220>
<223> IL-11 mutein

<400> 27

Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu
1 5 10 15

Glu Asp Thr Arg Gln Leu Thr Ile Gln Leu Lys Asp Lys Phe Pro Ala
20 25 30

Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala
35 40 45

Gly Ala Leu Gly Ala Leu Gln Leu Pro Ser Val Leu Thr Arg Leu Arg
50 55 60

Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala
65 70 75 80

Met Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln
85 90 95

Thr Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg
100 105 110

Leu Ala Leu Pro Gln Leu Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala
115 120 125

Pro Pro Ser Ser Thr Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu
130 135 140

Gly Gly Leu Val Leu Thr Leu Val Trp Ala Val Arg Gly Leu Leu Leu
145 150 155 160

Leu Lys Thr Arg Leu

165

<210> 28
<211> 165
<212> PRT
<213> Artificial

<220>
<223> IL-11 mutein

<400> 28

Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu
1 5 10 15

Glu Asp Thr Arg Gln Leu Thr Ile Gln Leu Lys Asp Lys Phe Pro Ala
20 25 30

Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala
35 40 45

Gly Ala Leu Gly Ala Leu Gln Leu Pro Ser Val Leu Thr Arg Leu Arg
50 55 60

Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala
65 70 75 80

Met Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln
85 90 95

Thr Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg
100 105 110

Leu Ala Leu Pro Gln Leu Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala
115 120 125

Pro Pro Ser Ser Thr Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu
130 135 140

Gly Gly Leu Ala Leu Thr Leu Ala Trp Ala Val Arg Gly Leu Leu Leu
145 150 155 160

Leu Lys Thr Arg Leu
165

<210> 29
<211> 178
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<220>
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<223> X = A, V, L, I, F, M, P, W

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<223> X = A, V, L, I, F, M, P, W

<400> 29

Pro Gly Pro Pro Pro Gly Ser Pro Arg Ala Ser Pro Asp Pro Arg Ala
1 5 10 15

Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu Glu Asp Thr
20 25 30

Arg Gln Leu Thr Ile Gln Leu Lys Asp Lys Phe Pro Ala Asp Gly Asp
35 40 45

His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala Gly Ala Leu
50 55 60

Gly Ala Leu Gln Leu Pro Ser Val Leu Thr Arg Leu Arg Ala Asp Leu
65 70 75 80

Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala Met Gly Ser
85 90 95

Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln Thr Arg Leu
100 105 110

Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg Leu Ala Leu
115 120 125

Pro Gln Leu Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala Pro Pro Ser
130 135 140

Ser Thr Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu Gly Gly Leu
145 150 155 160

Xaa Leu Thr Leu Xaa Trp Ala Val Arg Gly Leu Leu Leu Leu Lys Thr
165 170 175

Arg Leu

<210> 30
<211> 178
<212> PRT
<213> Artificial

<220>
<223> IL-11 mutein

<400> 30

Pro Gly Pro Pro Pro Gly Ser Pro Arg Ala Ser Pro Asp Pro Arg Ala
1 5 10 15

Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu Glu Asp Thr
20 25 30

Arg Gln Leu Thr Ile Gln Leu Lys Asp Lys Phe Pro Ala Asp Gly Asp
35 40 45

His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala Gly Ala Leu
50 55 60

Gly Ala Leu Gln Leu Pro Ser Val Leu Thr Arg Leu Arg Ala Asp Leu
65 70 75 80

Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala Met Gly Ser
85 90 95

Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln Thr Arg Leu
100 105 110

Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg Leu Ala Leu
115 120 125

Pro Gln Leu Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala Pro Pro Ser
130 135 140

Ser Thr Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu Gly Gly Leu
145 150 155 160

Val Leu Thr Leu Ala Trp Ala Val Arg Gly Leu Leu Leu Leu Lys Thr
165 170 175

Arg Leu

<210> 31
<211> 178
<212> PRT
<213> Artificial

<220>
<223> IL-11 mutein

<400> 31

Pro Gly Pro Pro Pro Gly Ser Pro Arg Ala Ser Pro Asp Pro Arg Ala
1 5 10 15

Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu Glu Asp Thr
20 25 30

Arg Gln Leu Thr Ile Gln Leu Lys Asp Lys Phe Pro Ala Asp Gly Asp
35 40 45

His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala Gly Ala Leu
50 55 60

Gly Ala Leu Gln Leu Pro Ser Val Leu Thr Arg Leu Arg Ala Asp Leu
65 70 75 80

Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala Met Gly Ser
85 90 95

Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln Thr Arg Leu
100 105 110

Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg Leu Ala Leu
115 120 125

Pro Gln Leu Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala Pro Pro Ser

130

135

140

Ser Thr Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu Gly Gly Leu
 145 150 155 160

Ala Leu Thr Leu Val Trp Ala Val Arg Gly Leu Leu Leu Leu Lys Thr
 165 170 175

Arg Leu

<210> 32
 <211> 178
 <212> PRT
 <213> Artificial

<220>
 <223> IL-11 mutein

<400> 32

Pro Gly Pro Pro Pro Gly Ser Pro Arg Ala Ser Pro Asp Pro Arg Ala
 1 5 10 15

Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu Glu Asp Thr
 20 25 30

Arg Gln Leu Thr Ile Gln Leu Lys Asp Lys Phe Pro Ala Asp Gly Asp
 35 40 45

His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala Gly Ala Leu
 50 55 60

Gly Ala Leu Gln Leu Pro Ser Val Leu Thr Arg Leu Arg Ala Asp Leu
 65 70 75 80

Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala Met Gly Ser
 85 90 95

Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln Thr Arg Leu
 100 105 110

Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg Leu Ala Leu
 115 120 125

Pro Gln Leu Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala Pro Pro Ser
130 135 140

Ser Thr Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu Gly Gly Leu
145 150 155 160

Val Leu Thr Leu Val Trp Ala Val Arg Gly Leu Leu Leu Leu Lys Thr
165 170 175

Arg Leu

<210> 33
<211> 178
<212> PRT
<213> Artificial

<220>
<223> IL-11 mutein

<400> 33

Pro Gly Pro Pro Pro Gly Ser Pro Arg Ala Ser Pro Asp Pro Arg Ala
1 5 10 15

Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser Leu Leu Glu Asp Thr
20 25 30

Arg Gln Leu Thr Ile Gln Leu Lys Asp Lys Phe Pro Ala Asp Gly Asp
35 40 45

His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala Gly Ala Leu
50 55 60

Gly Ala Leu Gln Leu Pro Ser Val Leu Thr Arg Leu Arg Ala Asp Leu
65 70 75 80

Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala Met Gly Ser
85 90 95

Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln Thr Arg Leu
100 105 110

Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg Leu Ala Leu
115 120 125

Pro Gln Leu Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala Pro Pro Ser
130 135 140

Ser Thr Trp Gly Gly Ile Arg Ala Ala His Ala Ile Leu Gly Gly Leu
145 150 155 160

Ala Leu Thr Leu Ala Trp Ala Val Arg Gly Leu Leu Leu Leu Lys Thr
165 170 175

Arg Leu

<210> 34
<211> 199
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<223> X = A, V, L, I, F, M, P, W

<400> 34

Met Asn Cys Val Cys Arg Leu Val Leu Val Val Leu Ser Leu Trp Pro
1 5 10 15

Asp Thr Ala Val Ala Pro Gly Pro Pro Pro Gly Ser Pro Arg Ala Ser
20 25 30

Pro Asp Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser
35 40 45

Leu Leu Glu Asp Thr Arg Gln Leu Thr Ile Gln Leu Lys Asp Lys Phe
50 55 60

Pro Ala Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met
65 70 75 80

Ser Ala Gly Ala Leu Gly Ala Leu Gln Leu Pro Ser Val Leu Thr Arg
85 90 95

Leu Arg Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg
100 105 110

Arg Ala Met Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr
115 120 125

Leu Gln Thr Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met
130 135 140

Ser Arg Leu Ala Leu Pro Gln Leu Pro Pro Asp Pro Pro Ala Pro Pro
145 150 155 160

Leu Ala Pro Pro Ser Ser Thr Trp Gly Gly Ile Arg Ala Ala His Ala
165 170 175

Ile Leu Gly Gly Leu Xaa Leu Thr Leu Xaa Trp Ala Val Arg Gly Leu
180 185 190

Leu Leu Leu Lys Thr Arg Leu
195

<210> 35
<211> 199
<212> PRT
<213> Artificial

<220>
<223> IL-11 mutein

<400> 35

Met Asn Cys Val Cys Arg Leu Val Leu Val Val Leu Ser Leu Trp Pro
1 5 10 15

Asp Thr Ala Val Ala Pro Gly Pro Pro Pro Gly Ser Pro Arg Ala Ser
20 25 30

Pro Asp Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser
35 40 45

Leu Leu Glu Asp Thr Arg Gln Leu Thr Ile Gln Leu Lys Asp Lys Phe

50

55

60

Pro Ala Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met
65 70 75 80

Ser Ala Gly Ala Leu Gly Ala Leu Gln Leu Pro Ser Val Leu Thr Arg
85 90 95

Leu Arg Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg
100 105 110

Arg Ala Met Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr
115 120 125

Leu Gln Thr Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met
130 135 140

Ser Arg Leu Ala Leu Pro Gln Leu Pro Pro Asp Pro Pro Ala Pro Pro
145 150 155 160

Leu Ala Pro Pro Ser Ser Thr Trp Gly Gly Ile Arg Ala Ala His Ala
165 170 175

Ile Leu Gly Gly Leu Val Leu Thr Leu Ala Trp Ala Val Arg Gly Leu
180 185 190

Leu Leu Leu Lys Thr Arg Leu
195

<210> 36
<211> 199
<212> PRT
<213> Artificial

<220>
<223> IL-11 mutein

<400> 36

Met Asn Cys Val Cys Arg Leu Val Leu Val Val Leu Ser Leu Trp Pro
1 5 10 15

Asp Thr Ala Val Ala Pro Gly Pro Pro Pro Gly Ser Pro Arg Ala Ser
20 25 30

Pro Asp Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser
35 40 45

Leu Leu Glu Asp Thr Arg Gln Leu Thr Ile Gln Leu Lys Asp Lys Phe
50 55 60

Pro Ala Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met
65 70 75 80

Ser Ala Gly Ala Leu Gly Ala Leu Gln Leu Pro Ser Val Leu Thr Arg
85 90 95

Leu Arg Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg
100 105 110

Arg Ala Met Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr
115 120 125

Leu Gln Thr Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met
130 135 140

Ser Arg Leu Ala Leu Pro Gln Leu Pro Pro Asp Pro Pro Ala Pro Pro
145 150 155 160

Leu Ala Pro Pro Ser Ser Thr Trp Gly Gly Ile Arg Ala Ala His Ala
165 170 175

Ile Leu Gly Gly Leu Ala Leu Thr Leu Val Trp Ala Val Arg Gly Leu
180 185 190

Leu Leu Leu Lys Thr Arg Leu
195

<210> 37

<211> 199

<212> PRT

<213> Artificial

<220>

<223> IL-11 mutein

<400> 37

Met Asn Cys Val Cys Arg Leu Val Leu Val Val Leu Ser Leu Trp Pro
1 5 10 15

Asp Thr Ala Val Ala Pro Gly Pro Pro Pro Gly Ser Pro Arg Ala Ser
20 25 30

Pro Asp Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser
35 40 45

Leu Leu Glu Asp Thr Arg Gln Leu Thr Ile Gln Leu Lys Asp Lys Phe
50 55 60

Pro Ala Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met
65 70 75 80

Ser Ala Gly Ala Leu Gly Ala Leu Gln Leu Pro Ser Val Leu Thr Arg
85 90 95

Leu Arg Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg
100 105 110

Arg Ala Met Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr
115 120 125

Leu Gln Thr Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met
130 135 140

Ser Arg Leu Ala Leu Pro Gln Leu Pro Pro Asp Pro Pro Ala Pro Pro
145 150 155 160

Leu Ala Pro Pro Ser Ser Thr Trp Gly Gly Ile Arg Ala Ala His Ala
165 170 175

Ile Leu Gly Gly Leu Val Leu Thr Leu Val Trp Ala Val Arg Gly Leu
180 185 190

Leu Leu Leu Lys Thr Arg Leu
195

<210> 38
<211> 199
<212> PRT
<213> Artificial

<220>
<223> IL-11 mutein

<400> 38

Met Asn Cys Val Cys Arg Leu Val Leu Val Val Leu Ser Leu Trp Pro
1 5 10 15

Asp Thr Ala Val Ala Pro Gly Pro Pro Gly Ser Pro Arg Ala Ser
20 25 30

Pro Asp Pro Arg Ala Glu Leu Asp Ser Thr Val Leu Leu Thr Arg Ser
35 40 45

Leu Leu Glu Asp Thr Arg Gln Leu Thr Ile Gln Leu Lys Asp Lys Phe
50 55 60

Pro Ala Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met
65 70 75 80

Ser Ala Gly Ala Leu Gly Ala Leu Gln Leu Pro Ser Val Leu Thr Arg
85 90 95

Leu Arg Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg
100 105 110

Arg Ala Met Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr
115 120 125

Leu Gln Thr Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met
130 135 140

Ser Arg Leu Ala Leu Pro Gln Leu Pro Pro Asp Pro Pro Ala Pro Pro
145 150 155 160

Leu Ala Pro Pro Ser Ser Thr Trp Gly Gly Ile Arg Ala Ala His Ala
165 170 175

Ile Leu Gly Gly Leu Ala Leu Thr Leu Ala Trp Ala Val Arg Gly Leu
180 185 190

Leu Leu Leu Lys Thr Arg Leu
195

<210> 39

<211> 165

<212> PRT
<213> Artificial

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<223> X = A, V, L, I, F, M, P, W

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<223> X = A, V, L, I, F, M, P, W

<400> 39

Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu
1 5 10 15

Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala
20 25 30

Asp Gly Asp His Ser Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala
35 40 45

Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg
50 55 60

Val Asp Leu Met Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala
65 70 75 80

Gly Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln
85 90 95

Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg
100 105 110

Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Val Ile Pro Leu Gly
115 120 125

Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala Ile Leu
130 135 140

Gly Gly Leu Xaa Leu Thr Leu Xaa Trp Ala Val Arg Gly Leu Leu Leu
145 150 155 160

Leu Lys Thr Arg Leu
165

<210> 40
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<212> PRT
<213> Artificial

<220>
<223> IL-11 mutein

<400> 40

Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu
1 5 10 15

Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala
20 25 30

Asp Gly Asp His Ser Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala
35 40 45

Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg
50 55 60

Val Asp Leu Met Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala
65 70 75 80

Gly Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln
85 90 95

Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg
100 105 110

Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Val Ile Pro Leu Gly
115 120 125

Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala Ile Leu
130 135 140

Gly Gly Leu Val Leu Thr Leu Ala Trp Ala Val Arg Gly Leu Leu Leu
145 150 155 160

Leu Lys Thr Arg Leu

<210> 41
 <211> 165
 <212> PRT
 <213> Artificial

<220>
 <223> IL-11 mutein

<400> 41

Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu
 1 5 10 15

Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala
 20 25 30

Asp Gly Asp His Ser Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala
 35 40 45

Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg
 50 55 60

Val Asp Leu Met Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala
 65 70 75 80

Gly Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln
 85 90 95

Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg
 100 105 110

Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Val Ile Pro Leu Gly
 115 120 125

Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala Ile Leu
 130 135 140

Gly Gly Leu Ala Leu Thr Leu Val Trp Ala Val Arg Gly Leu Leu Leu
 145 150 155 160

Leu Lys Thr Arg Leu
 165

<210> 42
<211> 165
<212> PRT
<213> Artificial

<220>
<223> IL-11 mutein

<400> 42

Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu
1 5 10 15

Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala
20 25 30

Asp Gly Asp His Ser Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala
35 40 45

Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg
50 55 60

Val Asp Leu Met Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala
65 70 75 80

Gly Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln
85 90 95

Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg
100 105 110

Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Val Ile Pro Leu Gly
115 120 125

Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala Ile Leu
130 135 140

Gly Gly Leu Val Leu Thr Leu Val Trp Ala Val Arg Gly Leu Leu Leu
145 150 155 160

Leu Lys Thr Arg Leu
165

<210> 43
<211> 165

<212> PRT
<213> Artificial

<220>
<223> IL-11 mutein

<400> 43

Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu
1 5 10 15

Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala
20 25 30

Asp Gly Asp His Ser Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala
35 40 45

Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg
50 55 60

Val Asp Leu Met Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala
65 70 75 80

Gly Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln
85 90 95

Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg
100 105 110

Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Val Ile Pro Leu Gly
115 120 125

Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala Ile Leu
130 135 140

Gly Gly Leu Ala Leu Thr Leu Ala Trp Ala Val Arg Gly Leu Leu Leu
145 150 155 160

Leu Lys Thr Arg Leu
165

<210> 44
<211> 178
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<223> X = A, V, L, I, F, M, P, W

<400> 44

Pro Gly Pro Pro Ala Gly Ser Pro Arg Val Ser Ser Asp Pro Arg Ala
1 5 10 15

Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu Ala Asp Thr
20 25 30

Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala Asp Gly Asp
35 40 45

His Ser Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala Gly Thr Leu
50 55 60

Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg Val Asp Leu
65 70 75 80

Met Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala Gly Gly Pro
85 90 95

Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln Ala Arg Leu
100 105 110

Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg Leu Ala Leu
115 120 125

Pro Gln Ala Ala Pro Asp Gln Pro Val Ile Pro Leu Gly Pro Pro Ala
130 135 140

Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala Ile Leu Gly Gly Leu
145 150 155 160

Xaa Leu Thr Leu Xaa Trp Ala Val Arg Gly Leu Leu Leu Leu Lys Thr

165

170

175

Arg Leu

<210> 45

<211> 178

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<400> 45

Pro Gly Pro Pro Ala Gly Ser Pro Arg Val Ser Ser Asp Pro Arg Ala
 1 5 10 15

Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu Ala Asp Thr
 20 25 30

Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala Asp Gly Asp
 35 40 45

His Ser Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala Gly Thr Leu
 50 55 60

Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg Val Asp Leu
 65 70 75 80

Met Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala Gly Gly Pro
 85 90 95

Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln Ala Arg Leu
 100 105 110

Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg Leu Ala Leu
 115 120 125

Pro Gln Ala Ala Pro Asp Gln Pro Val Ile Pro Leu Gly Pro Pro Ala
 130 135 140

Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala Ile Leu Gly Gly Leu
 145 150 155 160

Val Leu Thr Leu Ala Trp Ala Val Arg Gly Leu Leu Leu Leu Lys Thr
165 170 175

Arg Leu

<210> 46
<211> 178
<212> PRT
<213> Artificial

<220>
<223> IL-11 mutein

<400> 46

Pro Gly Pro Pro Ala Gly Ser Pro Arg Val Ser Ser Asp Pro Arg Ala
1 5 10 15

Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu Ala Asp Thr
20 25 30

Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala Asp Gly Asp
35 40 45

His Ser Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala Gly Thr Leu
50 55 60

Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg Val Asp Leu
65 70 75 80

Met Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala Gly Gly Pro
85 90 95

Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln Ala Arg Leu
100 105 110

Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg Leu Ala Leu
115 120 125

Pro Gln Ala Ala Pro Asp Gln Pro Val Ile Pro Leu Gly Pro Pro Ala
130 135 140

Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala Ile Leu Gly Gly Leu
145 150 155 160

Ala Leu Thr Leu Val Trp Ala Val Arg Gly Leu Leu Leu Leu Lys Thr
165 170 175

Arg Leu

<210> 47
<211> 178
<212> PRT
<213> Artificial

<220>
<223> IL-11 mutein

<400> 47

Pro Gly Pro Pro Ala Gly Ser Pro Arg Val Ser Ser Asp Pro Arg Ala
1 5 10 15

Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu Ala Asp Thr
20 25 30

Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala Asp Gly Asp
35 40 45

His Ser Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala Gly Thr Leu
50 55 60

Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg Val Asp Leu
65 70 75 80

Met Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala Gly Gly Pro
85 90 95

Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln Ala Arg Leu
100 105 110

Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg Leu Ala Leu
115 120 125

Pro Gln Ala Ala Pro Asp Gln Pro Val Ile Pro Leu Gly Pro Pro Ala
130 135 140

Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala Ile Leu Gly Gly Leu
145 150 155 160

Val Leu Thr Leu Val Trp Ala Val Arg Gly Leu Leu Leu Leu Lys Thr
165 170 175

Arg Leu

<210> 48
<211> 178
<212> PRT
<213> Artificial

<220>
<223> IL-11 mutein

<400> 48

Pro Gly Pro Pro Ala Gly Ser Pro Arg Val Ser Ser Asp Pro Arg Ala
1 5 10 15

Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu Ala Asp Thr
20 25 30

Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala Asp Gly Asp
35 40 45

His Ser Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala Gly Thr Leu
50 55 60

Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg Val Asp Leu
65 70 75 80

Met Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala Gly Gly Pro
85 90 95

Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln Ala Arg Leu
100 105 110

Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg Leu Ala Leu
115 120 125

Pro Gln Ala Ala Pro Asp Gln Pro Val Ile Pro Leu Gly Pro Pro Ala
130 135 140

Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala Ile Leu Gly Gly Leu

145 150 155 160

Ala Leu Thr Leu Ala Trp Ala Val Arg Gly Leu Leu Leu Leu Lys Thr
165 170 175

Arg Leu

<210> 49
<211> 199
<212> PRT
<213> Artificial

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<223> X = A, V, L, I, F, M, P, W

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<223> X = A, V, L, I, F, M, P, W

<400> 49

Met Asn Cys Val Cys Arg Leu Val Leu Val Val Leu Ser Leu Trp Pro
1 5 10 15

Asp Arg Val Val Ala Pro Gly Pro Pro Ala Gly Ser Pro Arg Val Ser
20 25 30

Ser Asp Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser
35 40 45

Leu Leu Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe
50 55 60

Pro Ala Asp Gly Asp His Ser Leu Asp Ser Leu Pro Thr Leu Ala Met
65 70 75 80

Ser Ala Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg
85 90 95

Leu Arg Val Asp Leu Met Ser Tyr Leu Arg His Val Gln Trp Leu Arg

100	105	110
Arg Ala Gly Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala		
115	120	125
Leu Gln Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met		
130	135	140
Ser Arg Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Val Ile Pro		
145	150	155
Leu Gly Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala		
165	170	175
Ile Leu Gly Gly Leu Xaa Leu Thr Leu Xaa Trp Ala Val Arg Gly Leu		
180	185	190
Leu Leu Leu Lys Thr Arg Leu		
195		
<210> 50		
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<212> PRT		
<213> Artificial		
<220>		
<223> IL-11 mutein		
<400> 50		
Met Asn Cys Val Cys Arg Leu Val Leu Val Val Leu Ser Leu Trp Pro		
1	5	10
Asp Arg Val Val Ala Pro Gly Pro Pro Ala Gly Ser Pro Arg Val Ser		
20	25	30
Ser Asp Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser		
35	40	45
Leu Leu Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe		
50	55	60
Pro Ala Asp Gly Asp His Ser Leu Asp Ser Leu Pro Thr Leu Ala Met		
65	70	75
		80

Ser Ala Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg
85 90 95

Leu Arg Val Asp Leu Met Ser Tyr Leu Arg His Val Gln Trp Leu Arg
100 105 110

Arg Ala Gly Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala
115 120 125

Leu Gln Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met
130 135 140

Ser Arg Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Val Ile Pro
145 150 155 160

Leu Gly Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala
165 170 175

Ile Leu Gly Gly Leu Val Leu Thr Leu Ala Trp Ala Val Arg Gly Leu
180 185 190

Leu Leu Leu Lys Thr Arg Leu
195

<210> 51
<211> 199
<212> PRT
<213> Artificial

<220>
<223> IL-11 mutein

<400> 51

Met Asn Cys Val Cys Arg Leu Val Leu Val Val Leu Ser Leu Trp Pro
1 5 10 15

Asp Arg Val Val Ala Pro Gly Pro Pro Ala Gly Ser Pro Arg Val Ser
20 25 30

Ser Asp Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser
35 40 45

Leu Leu Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe
50 55 60

Pro Ala Asp Gly Asp His Ser Leu Asp Ser Leu Pro Thr Leu Ala Met
65 70 75 80

Ser Ala Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg
85 90 95

Leu Arg Val Asp Leu Met Ser Tyr Leu Arg His Val Gln Trp Leu Arg
100 105 110

Arg Ala Gly Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala
115 120 125

Leu Gln Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met
130 135 140

Ser Arg Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Val Ile Pro
145 150 155 160

Leu Gly Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala
165 170 175

Ile Leu Gly Gly Leu Ala Leu Thr Leu Val Trp Ala Val Arg Gly Leu
180 185 190

Leu Leu Leu Lys Thr Arg Leu
195

<210> 52
<211> 199
<212> PRT
<213> Artificial

<220>
<223> IL-11 mutein

<400> 52

Met Asn Cys Val Cys Arg Leu Val Leu Val Val Leu Ser Leu Trp Pro
1 5 10 15

Asp Arg Val Val Ala Pro Gly Pro Pro Ala Gly Ser Pro Arg Val Ser
20 25 30

Ser Asp Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser
35 40 45

Leu Leu Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe
50 55 60

Pro Ala Asp Gly Asp His Ser Leu Asp Ser Leu Pro Thr Leu Ala Met
65 70 75 80

Ser Ala Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg
85 90 95

Leu Arg Val Asp Leu Met Ser Tyr Leu Arg His Val Gln Trp Leu Arg
100 105 110

Arg Ala Gly Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala
115 120 125

Leu Gln Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met
130 135 140

Ser Arg Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Val Ile Pro
145 150 155 160

Leu Gly Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala
165 170 175

Ile Leu Gly Gly Leu Val Leu Thr Leu Val Trp Ala Val Arg Gly Leu
180 185 190

Leu Leu Leu Lys Thr Arg Leu
195

<210> 53
<211> 199
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<213> Artificial

<220>
<223> IL-11 mutein

<400> 53

Met Asn Cys Val Cys Arg Leu Val Leu Val Val Leu Ser Leu Trp Pro
1 5 10 15

Asp Arg Val Val Ala Pro Gly Pro Pro Ala Gly Ser Pro Arg Val Ser

20	25	30
Ser Asp Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser		
35	40	45
Leu Leu Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe		
50	55	60
Pro Ala Asp Gly Asp His Ser Leu Asp Ser Leu Pro Thr Leu Ala Met		
65	70	75
Ser Ala Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg		
85	90	95
Leu Arg Val Asp Leu Met Ser Tyr Leu Arg His Val Gln Trp Leu Arg		
100	105	110
Arg Ala Gly Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala		
115	120	125
Leu Gln Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met		
130	135	140
Ser Arg Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Val Ile Pro		
145	150	155
Leu Gly Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala		
165	170	175
Ile Leu Gly Gly Leu Ala Leu Thr Leu Ala Trp Ala Val Arg Gly Leu		
180	185	190
Leu Leu Leu Lys Thr Arg Leu		
195		

<210> 54
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<223> X = A, V, L, I, F, M, P, W

<400> 54

Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu
1 5 10 15

Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala
20 25 30

Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala
35 40 45

Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg
50 55 60

Val Asp Leu Met Ser Tyr Phe Arg His Val Gln Trp Leu Arg Arg Ala
65 70 75 80

Ala Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln
85 90 95

Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg
100 105 110

Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Ala Val Pro Leu Gly
115 120 125

Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala Ile Leu
130 135 140

Gly Gly Leu Xaa Leu Thr Leu Xaa Trp Ala Val Arg Gly Leu Leu Leu
145 150 155 160

Leu Lys Thr Arg Leu
165

<210> 55
<211> 165

<212> PRT
<213> Artificial

<220>
<223> IL-11 mutein

<400> 55

Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu
1 5 10 15

Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala
20 25 30

Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala
35 40 45

Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg
50 55 60

Val Asp Leu Met Ser Tyr Phe Arg His Val Gln Trp Leu Arg Arg Ala
65 70 75 80

Ala Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln
85 90 95

Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg
100 105 110

Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Ala Val Pro Leu Gly
115 120 125

Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala Ile Leu
130 135 140

Gly Gly Leu Val Leu Thr Leu Ala Trp Ala Val Arg Gly Leu Leu Leu
145 150 155 160

Leu Lys Thr Arg Leu
165

<210> 56
<211> 165
<212> PRT
<213> Artificial

<220>

<223> IL-11 mutein

<400> 56

Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu
1 5 10 15

Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala
20 25 30

Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala
35 40 45

Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg
50 55 60

Val Asp Leu Met Ser Tyr Phe Arg His Val Gln Trp Leu Arg Arg Ala
65 70 75 80

Ala Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln
85 90 95

Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg
100 105 110

Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Ala Val Pro Leu Gly
115 120 125

Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala Ile Leu
130 135 140

Gly Gly Leu Ala Leu Thr Leu Val Trp Ala Val Arg Gly Leu Leu Leu
145 150 155 160

Leu Lys Thr Arg Leu
165

<210> 57

<211> 165

<212> PRT

<213> Artificial

<220>

<223> IL-11 mutein

<400> 57

Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu
1 5 10 15

Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala
20 25 30

Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala
35 40 45

Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg
50 55 60

Val Asp Leu Met Ser Tyr Phe Arg His Val Gln Trp Leu Arg Arg Ala
65 70 75 80

Ala Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln
85 90 95

Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg
100 105 110

Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Ala Val Pro Leu Gly
115 120 125

Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala Ile Leu
130 135 140

Gly Gly Leu Val Leu Thr Leu Val Trp Ala Val Arg Gly Leu Leu Leu
145 150 155 160

Leu Lys Thr Arg Leu
165

<210> 58

<211> 165

<212> PRT

<213> Artificial

<220>

<223> IL-11 mutein

<400> 58

Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu
1 5 10 15

Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala
20 25 30

Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala
35 40 45

Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg
50 55 60

Val Asp Leu Met Ser Tyr Phe Arg His Val Gln Trp Leu Arg Arg Ala
65 70 75 80

Ala Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln
85 90 95

Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg
100 105 110

Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Ala Val Pro Leu Gly
115 120 125

Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala Ile Leu
130 135 140

Gly Gly Leu Ala Leu Thr Leu Ala Trp Ala Val Arg Gly Leu Leu Leu
145 150 155 160

Leu Lys Thr Arg Leu
165

<210> 59
<211> 178
<212> PRT
<213> Artificial

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<222> (165)..(165)

<223> X = A, V, L, I, F, M, P, W

<400> 59

Pro Gly Pro Pro Ala Gly Ser Pro Arg Val Ser Ser Asp Pro Arg Ala
1 5 10 15

Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu Ala Asp Thr
20 25 30

Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala Asp Gly Asp
35 40 45

His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala Gly Thr Leu
50 55 60

Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg Val Asp Leu
65 70 75 80

Met Ser Tyr Phe Arg His Val Gln Trp Leu Arg Arg Ala Ala Gly Pro
85 90 95

Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln Ala Arg Leu
100 105 110

Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg Leu Ala Leu
115 120 125

Pro Gln Ala Ala Pro Asp Gln Pro Ala Val Pro Leu Gly Pro Pro Ala
130 135 140

Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala Ile Leu Gly Gly Leu
145 150 155 160

Xaa Leu Thr Leu Xaa Trp Ala Val Arg Gly Leu Leu Leu Leu Lys Thr
165 170 175

Arg Leu

<210> 60

<211> 178
<212> PRT
<213> Artificial

<220>
<223> IL-11 mutein

<400> 60

Pro Gly Pro Pro Ala Gly Ser Pro Arg Val Ser Ser Asp Pro Arg Ala
1 5 10 15

Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu Ala Asp Thr
20 25 30

Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala Asp Gly Asp
35 40 45

His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala Gly Thr Leu
50 55 60

Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg Val Asp Leu
65 70 75 80

Met Ser Tyr Phe Arg His Val Gln Trp Leu Arg Arg Ala Ala Gly Pro
85 90 95

Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln Ala Arg Leu
100 105 110

Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg Leu Ala Leu
115 120 125

Pro Gln Ala Ala Pro Asp Gln Pro Ala Val Pro Leu Gly Pro Pro Ala
130 135 140

Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala Ile Leu Gly Gly Leu
145 150 155 160

Val Leu Thr Leu Ala Trp Ala Val Arg Gly Leu Leu Leu Leu Lys Thr
165 170 175

Arg Leu

<210> 61
<211> 149
<212> PRT
<213> Artificial

<220>
<223> IL-11 mutein

<400> 61

Pro Gly Pro Pro Ala Gly Ser Pro Arg Val Ser Ser Asp Pro Arg Ala
1 5 10 15

Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu Ala Asp Thr
20 25 30

Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala Asp Gly Asp
35 40 45

His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala Gly Thr Leu
50 55 60

Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg Val Asp Leu
65 70 75 80

Met Ser Tyr Phe Arg His Val Gln Trp Leu Arg Arg Ala Ala Gly Pro
85 90 95

Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln Ala Arg Leu
100 105 110

Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg Leu Ala Leu
115 120 125

Pro Gln Ala Ala Pro Asp Gln Pro Ala Val Pro Leu Gly Pro Pro Ala
130 135 140

Ser Ala Trp Gly Ser
145

<210> 62
<211> 178
<212> PRT
<213> Artificial

<220>

<223> IL-11 mutein

<400> 62

Pro Gly Pro Pro Ala Gly Ser Pro Arg Val Ser Ser Asp Pro Arg Ala
1 5 10 15

Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu Ala Asp Thr
20 25 30

Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala Asp Gly Asp
35 40 45

His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala Gly Thr Leu
50 55 60

Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg Val Asp Leu
65 70 75 80

Met Ser Tyr Phe Arg His Val Gln Trp Leu Arg Arg Ala Ala Gly Pro
85 90 95

Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln Ala Arg Leu
100 105 110

Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg Leu Ala Leu
115 120 125

Pro Gln Ala Ala Pro Asp Gln Pro Ala Val Pro Leu Gly Pro Pro Ala
130 135 140

Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala Ile Leu Gly Gly Leu
145 150 155 160

Val Leu Thr Leu Val Trp Ala Val Arg Gly Leu Leu Leu Leu Lys Thr
165 170 175

Arg Leu

<210> 63

<211> 178

<212> PRT

<213> Artificial

<220>

<223> IL-11 mutein

<400> 63

Pro Gly Pro Pro Ala Gly Ser Pro Arg Val Ser Ser Asp Pro Arg Ala
1 5 10 15

Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser Leu Leu Ala Asp Thr
20 25 30

Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe Pro Ala Asp Gly Asp
35 40 45

His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met Ser Ala Gly Thr Leu
50 55 60

Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg Val Asp Leu
65 70 75 80

Met Ser Tyr Phe Arg His Val Gln Trp Leu Arg Arg Ala Ala Gly Pro
85 90 95

Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala Leu Gln Ala Arg Leu
100 105 110

Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg Leu Ala Leu
115 120 125

Pro Gln Ala Ala Pro Asp Gln Pro Ala Val Pro Leu Gly Pro Pro Ala
130 135 140

Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala Ile Leu Gly Gly Leu
145 150 155 160

Ala Leu Thr Leu Ala Trp Ala Val Arg Gly Leu Leu Leu Leu Lys Thr
165 170 175

Arg Leu

<210> 64

<211> 199

<212> PRT

<213> Artificial

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<222> (182)..(182)

<223> X = A, V, L, I, F, M, P, W

<220>

<221> MISC_FEATURE

<222> (186)..(186)

<223> X = A, V, L, I, F, M, P, W

<400> 64

Met Asn Cys Val Cys Arg Leu Val Leu Val Val Leu Ser Leu Trp Pro
1 5 10 15

Asp Arg Val Val Ala Pro Gly Pro Pro Ala Gly Ser Pro Arg Val Ser
20 25 30

Ser Asp Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser
35 40 45

Leu Leu Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe
50 55 60

Pro Ala Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met
65 70 75 80

Ser Ala Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg
85 90 95

Leu Arg Val Asp Leu Met Ser Tyr Phe Arg His Val Gln Trp Leu Arg
100 105 110

Arg Ala Ala Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala
115 120 125

Leu Gln Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met
130 135 140

Ser Arg Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Ala Val Pro
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Leu Gly Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala
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Ile Leu Gly Gly Leu Xaa Leu Thr Leu Xaa Trp Ala Val Arg Gly Leu
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Leu Leu Leu Lys Thr Arg Leu
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<212> PRT
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<223> IL-11 mutein

<400> 65

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Asp Arg Val Val Ala Pro Gly Pro Pro Ala Gly Ser Pro Arg Val Ser
20 25 30

Ser Asp Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser
35 40 45

Leu Leu Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe
50 55 60

Pro Ala Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met
65 70 75 80

Ser Ala Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg
85 90 95

Leu Arg Val Asp Leu Met Ser Tyr Phe Arg His Val Gln Trp Leu Arg
100 105 110

Arg Ala Ala Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala
115 120 125

Leu Gln Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met

130	135	140
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Ser Asp Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser		
	35	40 45
Leu Leu Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe		
	50	55 60
Pro Ala Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met		
65	70	75 80
Ser Ala Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg		
	85	90 95
Leu Arg Val Asp Leu Met Ser Tyr Phe Arg His Val Gln Trp Leu Arg		
	100	105 110

Arg Ala Ala Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala
115 120 125

Leu Gln Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met
130 135 140

Ser Arg Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Ala Val Pro
145 150 155 160

Leu Gly Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala
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Ile Leu Gly Gly Leu Ala Leu Thr Leu Val Trp Ala Val Arg Gly Leu
180 185 190

Leu Leu Leu Lys Thr Arg Leu
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<210> 67
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<400> 67

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Ser Asp Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser
35 40 45

Leu Leu Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe
50 55 60

Pro Ala Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met
65 70 75 80

Ser Ala Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg
85 90 95

Leu Arg Val Asp Leu Met Ser Tyr Phe Arg His Val Gln Trp Leu Arg
100 105 110

Arg Ala Ala Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala
115 120 125

Leu Gln Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met
130 135 140

Ser Arg Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Ala Val Pro
145 150 155 160

Leu Gly Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala
165 170 175

Ile Leu Gly Gly Leu Val Leu Thr Leu Val Trp Ala Val Arg Gly Leu
180 185 190

Leu Leu Leu Lys Thr Arg Leu
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<210> 68
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Met Asn Cys Val Cys Arg Leu Val Leu Val Val Leu Ser Leu Trp Pro
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20 25 30

Ser Asp Pro Arg Ala Asp Leu Asp Ser Ala Val Leu Leu Thr Arg Ser
35 40 45

Leu Leu Ala Asp Thr Arg Gln Leu Ala Ala Gln Met Arg Asp Lys Phe
50 55 60

Pro Ala Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu Ala Met
65 70 75 80

Ser Ala Gly Thr Leu Gly Ser Leu Gln Leu Pro Gly Val Leu Thr Arg
85 90 95

Leu Arg Val Asp Leu Met Ser Tyr Phe Arg His Val Gln Trp Leu Arg
100 105 110

Arg Ala Ala Gly Pro Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Ala
115 120 125

Leu Gln Ala Arg Leu Glu Arg Leu Leu Arg Arg Leu Gln Leu Leu Met
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Ser Arg Leu Ala Leu Pro Gln Ala Ala Pro Asp Gln Pro Ala Val Pro
145 150 155 160

Leu Gly Pro Pro Ala Ser Ala Trp Gly Ser Ile Arg Ala Ala His Ala
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Ile Leu Gly Gly Leu Ala Leu Thr Leu Ala Trp Ala Val Arg Gly Leu
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Leu Leu Leu Lys Thr Arg Leu
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<223> nnn = GCT, GCC, GCA, GCG, GTT, GTC, GTA, GTG, TTA, TTG, CTT, CTC, CTA, CTG, ATT, ATC, ATA, TTT, TTC, ATG, CCT, CCC, CCA, CCG, TGG

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<222> (493)..(495)

<223> nnn = GCT, GCC, GCA, GCG, GTT, GTC, GTA, GTG, TTA, TTG, CTT, CTC, CTA, CTG, ATT, ATC, ATA, TTT, TTC, ATG, CCT, CCC, CCA, CCG, TGG

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<222> (544)..(546)

<223> nnn = GCT, GCC, GCA, GCG, GTT, GTC, GTA, GTG, TTA, TTG, CTT, CTC, CTA, CTG, ATT, ATC, ATA, TTT, TTC, ATG, CCT, CCC, CCA, CCG, TGG

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<223> nnn = GCT, GCC, GCA, GCG, GTT, GTC, GTA, GTG, TTA, TTG, CTT, CTC, CTA, CTG, ATT, ATC, ATA, TTT, TTC, ATG, CCT, CCC, CCA, CCG, TGG

<400> 72

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 <212> DNA
 <213> Artificial

<220>
 <223> IL-11 mutein

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<211> 185
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<400> 78

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Arg Ser Leu Leu Ala Asp Thr Arg Gln Leu Ala Ala Gln Leu Arg Asp
35 40 45

Lys Phe Pro Ala Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu

50

55

60

Ala Met Ser Ala Gly Ala Leu Gly Ala Leu Gln Leu Pro Gly Val Leu
65 70 75 80

Thr Arg Leu Arg Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp
85 90 95

Leu Arg Arg Ala Gly Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu
100 105 110

Gly Thr Leu Gln Ala Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu
115 120 125

Leu Met Ser Arg Leu Ala Leu Pro Gln Pro Pro Pro Asp Pro Pro Ala
130 135 140

Pro Pro Leu Ala Pro Pro Ser Ser Ala Trp Gly Gly Ile Arg Ala Ala
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Lys Phe Pro Ala Asp Gly Asp His Asn Leu Asp Ser Leu Pro Thr Leu
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Ala Met Ser Ala Gly Ala Leu Gly Ala Leu Gln Leu Pro Gly Val Leu
 65 70 75 80

Thr Arg Leu Arg Ala Asp Leu Leu Ser Tyr Leu Arg His Val Gln Trp
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Leu Arg Arg Ala Gly Gly Ser Ser Leu Lys Thr Leu Glu Pro Glu Leu
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Gly Thr Leu Gln Ala Arg Leu Asp Arg Leu Leu Arg Arg Leu Gln Leu
 115 120 125

Leu Met Ser Arg Leu Ala Leu Pro Gln Pro Pro Pro Asp Pro Pro Ala
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Pro Pro Leu Ala Pro Pro Ser Ser Ala Trp Gly Gly Ile Arg Ala Ala
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<220>
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